REMARKS

Reconsideration of this application, as amended, is respectfully requested.

THE CLAIMS

Claim 28 has been amended to incorporate the subject matter of (now canceled) claim 38, and to clarify the feature of the present invention whereby the spectral resolution section spectrally resolves the laser light into laser lines of different emission wavelengths which are suitable for excitation of the respective fluorescent indicators and which have respective different optical axes, as clearly shown in Fig. 3 and as supported by the disclosure in the specification at, for example, page 18, line 11 to page 20, line 11. No new matter has been added, and it is respectfully submitted that the amendments to the claims are clarifying in nature. Accordingly, it is respectfully requested that the amendments to claim 28 be approved and entered under 37 CFR 1.116.

THE PRIOR ART REJECTION

Claims 28-32 and 34 were rejected under 35 USC 103 as being obvious in view of the combination of USP 6,167,173 (previously cited "Schoeppe et al") and USP 4,449,821 (previously cited "Lee"); and claims 33 and 35-39 were were rejected under 35 USC

103 as being obvious in view of the combination of Schoeppe et al and Lee with one of USP 5,684,582 (previously cited "Eastman et al") and WO 98/57152 (previously cited "Goix"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

According to the present invention as recited in clarified amended independent claim 28, a laser microscope is provided which irradiates a sample dyed with a plurality of fluorescent indicators with a laser light. As recited in amended independent claim 28, the laser microscope includes a light source to emit the laser light, and a spectral resolution section to spectrally resolve the laser light into laser lines of different emission wavelengths which are suitable for excitation of the respective fluorescent indicators and which have respective different optical axes. As recited in amended independent claim 28, moreover, the light receiving element array receives the laser lines simultaneously and outputs a detection signal that includes light intensity information of the laser lines, and a controller simultaneously control light intensities of the respective laser lines based on the detection signal. And as recited in amended independent claim 28, the laser microscope detects a plurality of fluorescent lights emitted from the sample when the laser lines are irradiated thereto.

That is, according to the present invention as recited in amended independent claim 28, the spectral resolution section spectrally resolves laser light into laser lines that have emission wavelengths for exciting fluorescent indicators on the sample, and the laser lines are resolved to have different optical axes so that they are emitted onto a light receiving element array that simultaneously receives the laser lines and outputs a detection signal that includes light intensity information of the laser lines.

With this structure, respective lines of laser light, which are intended for excitation of a plurality of fluorescent indicators dyeing a sample, are simultaneously stabilized, since the different lines of the laser light are separated by the spectral resolution section along different optical axes so as to be monitored separately. The intensities of the lines for exciting different types of fluorescent indicators can therefore be kept constant as recited in claim 30, for example. And as a result, the intensities of fluorescent light from the sample can be correctly evaluated.

By contrast, as previously pointed out, Schoeppe et al merely discloses a filter wheel or slide 21, which is region or line selective, and a monitor diode 19 which is provided to monitor "in an isolated manner" the output of a predetermined laser line for stabilization (column 4, lines 1-19). As recognized by the

Examiner, Schoeppe et al does not disclose simultaneously monitoring lights of different emission wavelengths with a light receiving element array and simultaneously controlling the lights based on an output of the light receiving element array, as recited in claim 28.

Indeed, it is respectfully submitted that Schoeppe et al fails to disclose monitoring laser lines simultaneously, and that the teaching in Schoeppe et al of a filter wheel or slide (for mechanical selection of a laser line to monitor) is contrary to the present invention.

The Examiner has cited Lee for the disclosure of monitoring a plurality of wavelengths simultaneously. Lee discloses detecting the red and blue intensities of a reference beam with color intensity sensors, and then using the detected intensities for controlling a brightness of a lamp to maintain color temperature of the lamp. According to Lee, a beam is split from a beam to a sample using a beam splitter 4 and then one portion of the split beam falls on the color sensors 6. In Lee, however, the beam is not spectrally resolved. That is, the blue color sensor detects a blue amount in the part of the light beam (which is not limited to blue light) that falls on the blue color sensor, while the red color sensor detects a red amount in the part of the light beam (which is not limited to red light) that falls on the red color sensor.

Accordingly, it is respectfully submitted that even if the teachings of Schoeppe et al and Lee were combinable in the manner suggested by the Examiner, such combination would still not disclose, teach or suggest a spectral resolution section to spectrally resolve the laser light into laser lines of different emission wavelengths which are suitable for excitation of the respective fluorescent indicators and which have respective different optical axes, or a light receiving element array to receive the laser lines (having the different optical axes) simultaneously and to output a detection signal that includes light intensity information of the laser lines, as according to the present invention as recited in amended independent claim 28.

As recognized by the Examiner, Goix discloses marking a sample with fluorescent indicators. In addition, Goix discloses spectrally resolving light emitted from the sample when the fluorescent indicators are excited.

It is respectfully pointed out, however, that according to the present invention as recited in amended independent claim 28, the laser lines are spectrally resolved and monitored before reaching the sample to enable stabilization of laser lines for stimulating indicators in the sample. That is, it is respectfully submitted that spectrally resolving fluorescence from a sample does not correspond to spectrally resolving laser light from a light source (going to a sample) into laser lines of different

emission wavelengths which are suitable for excitation of the respective fluorescent indicators and which have respective different optical axes, or a light receiving element array to receive the laser lines (having the different optical axes and being suitable for excitation of the fluorescent indicators) simultaneously and to output a detection signal that includes light intensity information of the laser lines, as according to the present invention as recited in amended independent claim 28.

Accordingly, it is respectfully submitted that if Goix were combinable with Schoeppe et al and Lee in the manner suggested by the Examiner, such combination would result in using the technology of Goix to spectrally resolve fluorescent emissions from a sample, just as in Goix.

In view of the foregoing, it is respectfully submitted that Schoppe et al, Lee and Goix fail to disclose, teach or suggest the structure of the present invention as recited in amended independent claim 28, and that amended independent claim 28 and claims 29-37 depending therefrom all clearly patentably distinguish over Schoeppe et al, Lee and Goix, taken singly or in any combination, under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned for prompt action.

Respectfully submitted,

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